EBIO 327: Biological Diversity Lab

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Course Website: https://owlspace-ccm.rice.edu/portal/site/EBIO-327-001-F16

Overview
This is a one-credit lecture/laboratory course focused on recognizing, quantifying, and analyzing biological diversity. During this course, students will work in groups to design, execute, and communicate the results of a systematic survey of particular taxonomic groups in the Big Thicket National Preserve in east Texas. The course includes a required, weekend-long field trip.

Course Learning Goals

By the end of the course, students are expected to know:

- what biological diversity is including the basic scales and hierarchical levels of biodiversity;
- why biodiversity is important including why it is important to you;
- how biodiversity is measured including the strengths and weaknesses of associated field sampling strategies and diversity indices; and
- the main threats to biodiversity globally and locally.

By the end of the course, students are expected to be able to:

- locate peer-reviewed research articles and extract meaningful information;
- design and conduct a biological species inventory focused on a particular taxonomic group;
- identify local species within a particular taxonomic group;
- quantify the diversity of sampled habitats and communities via species accumulation and rank abundance curves, and the calculation of diversity indices;
- create scientific reports that are consistent with published peer-reviewed journal articles in terms of their format, terminology, grammar, tables, figures, and citations; and
- deliver effective oral presentations communicating the results of a scientific study.

Location and time
Scheduled class meetings are selected Wednesdays from noon – 5 PM in ABL 125. However, we will only meet at noon on fieldtrip days (see schedule below); **on all other days, we will meet at 1 PM**. Please note that some fieldtrips take place outside of scheduled class meeting times. **Attendance on the weekend fieldtrip is mandatory.** Details regarding the fieldtrips will be discussed during the first class meeting.

Disabilities
If you have a disability that will impact your work in this class, please speak with me during the first two weeks of class. All discussions will remain confidential. Additionally, you must contact Disability Support Services (http://dss.rice.edu/) located in the Allen Center, Room 111.

Honor Code
Collaboration with classmates is encouraged in this class. However, any use of outside resources (including published and unpublished research, websites, or personal communication) should be clearly cited on all reports. Any questions about a potential violation of the Rice University Honor Code should be brought to my attention immediately.

Course schedule (subject to change)

Date	Activity
24-Aug	Organizational meeting (mandatory)
31-Aug	**Fieldtrip to Chinatown** (leave at noon; return by 5 pm)
7-Sep	Lecture/discussion - Analyzing biodiversity data
14-Sep	Lecture/discussion – Introduction to the Big Thicket; **Report 1 due**
21-Sep	**Fieldtrip to the Big Thicket NP** (leave at noon; return by 10 pm)
28-Sep	In-class workshop – sampling proposals
5-Oct	Student presentations – **Sampling proposals due** (written and oral)
14-16 Oct	**Multi-day fieldtrip to the Big Thicket NP** (leave 7 pm Fri – return 5 pm Sun)
19-Oct	No class
26-Oct	No class
2-Nov	No class
9-Nov	No class
16-Nov	No class; **iNaturalist observations due**
23-Nov	No class; **final written reports due**
30-Nov	Student presentations; **final oral reports due**

Assignments

More detailed instructions for these assignments described below may be found on our Owl-space website. All assignments should be submitted electronically via Owl-Space.

- **Chinatown fieldtrip** – Students work in groups to survey the biological diversity of food items at a supermarket in Chinatown. Students analyze data collected at the supermarket using methods that are used later in the semester to assess the biological diversity of wild organisms. Each student submits a report based on data collected by their group and by the entire class.

- **Sampling proposal** – Students work in groups to propose a methodology for sampling a particular taxonomic group in the Big Thicket National Preserve over a 24-hour period. Each group submits a written report and delivers an oral presentation to the class describing their proposed methods.

- **Biological survey of Big Thicket National Preserve** – The central component of the course is a weekend-long fieldtrip to the Big Thicket National Preserve in which students work in groups to execute the surveys they designed and proposed. All groups have access to an expert consultant that assists in the design, and in some cases also the execution, of the survey. Some groups collect specimens that they curate using appropriate methods and deposit into a museum collection.

- **iNaturalist observations** – Students share the results of their biological survey of a particular taxonomic group in the Big Thicket National Preserve by posting images and information about species they observe in the field using the website iNaturalist.org.

- **Final reports** – Students submit a written report and deliver an oral presentation to the class that describe the results of their biological survey of a particular taxonomic group in the Big Thicket National Preserve.

Grading

Late assignments will be penalized by 10% of the original point value per 24 hours late.

ASSIGNMENT	POINTS	% OF FINAL GRADE
Chinatown report	100	10%
Sampling proposal (written)	100	10%
Sampling proposal (presentation)	100	10%
iNaturalist observations	100	10%
Final report (written)	300	30%
Final report (presentation)	200	20%
Participation	100	10%
TOTAL	**1000**	**100%**